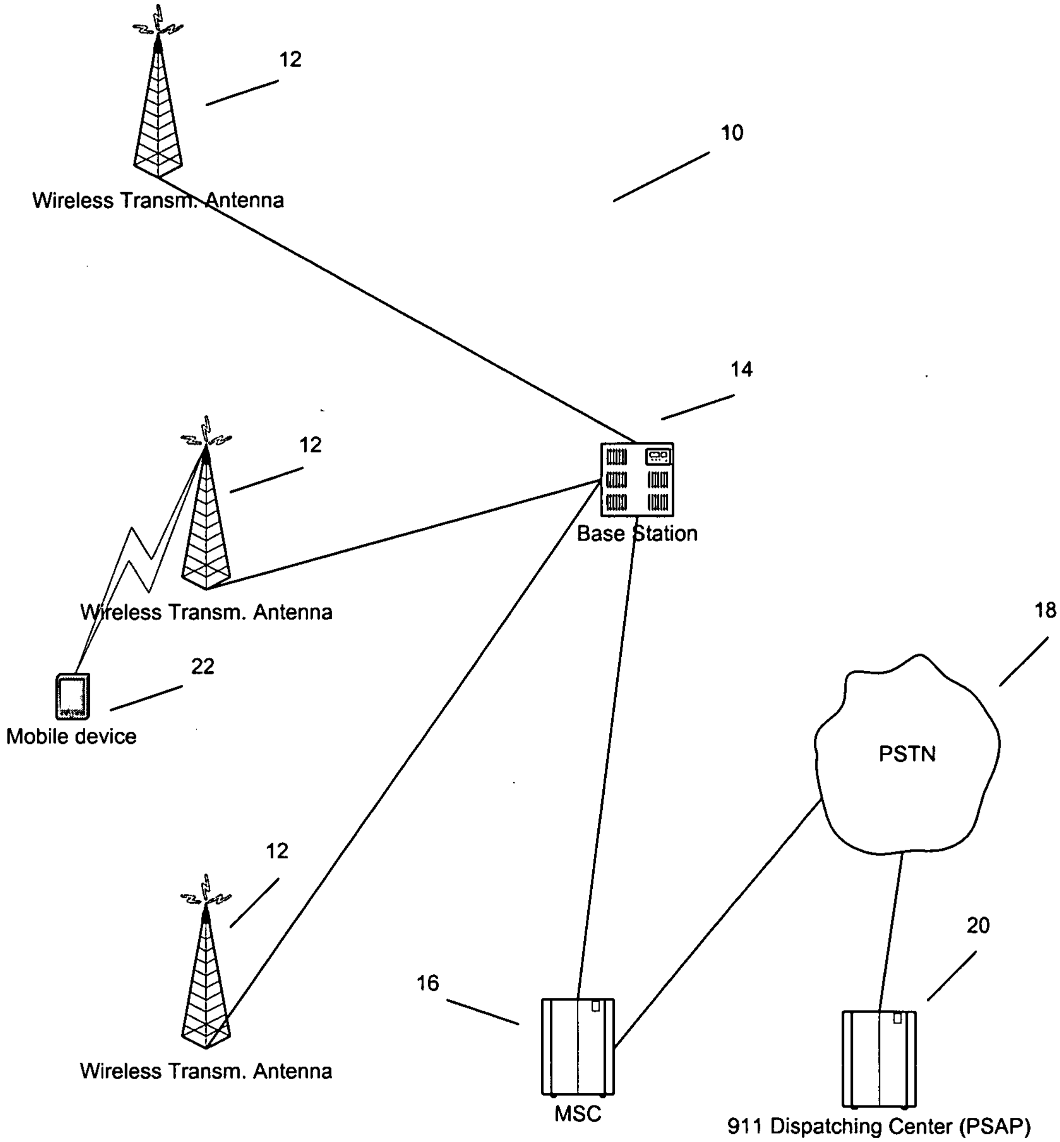


Figure 1

09927992.081001

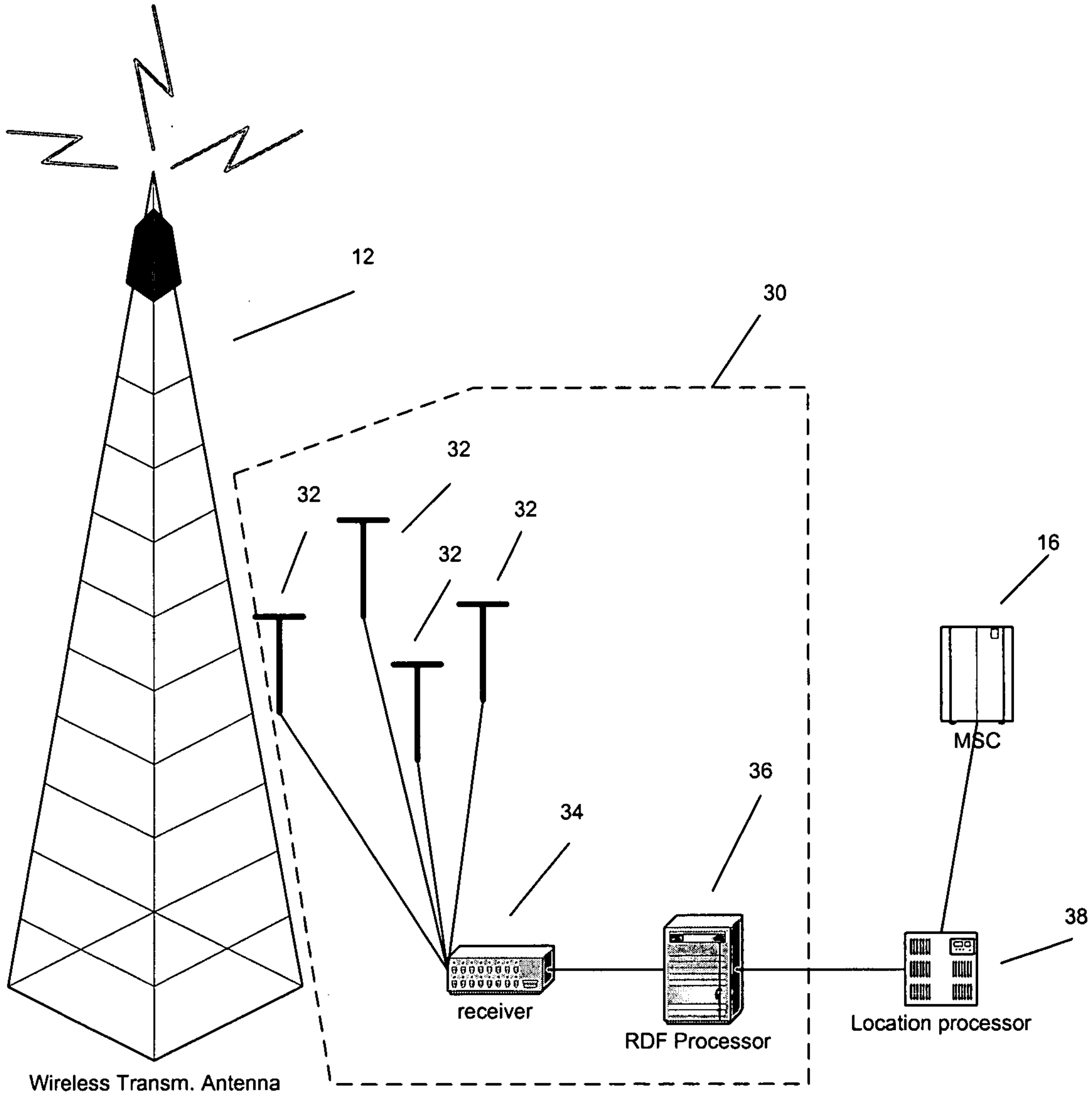

12
30
32
32
32
32
16
MSC
36
34
38
receiver
RDF Processor
Location processor
Wireless Transm. Antenna

Figure 2

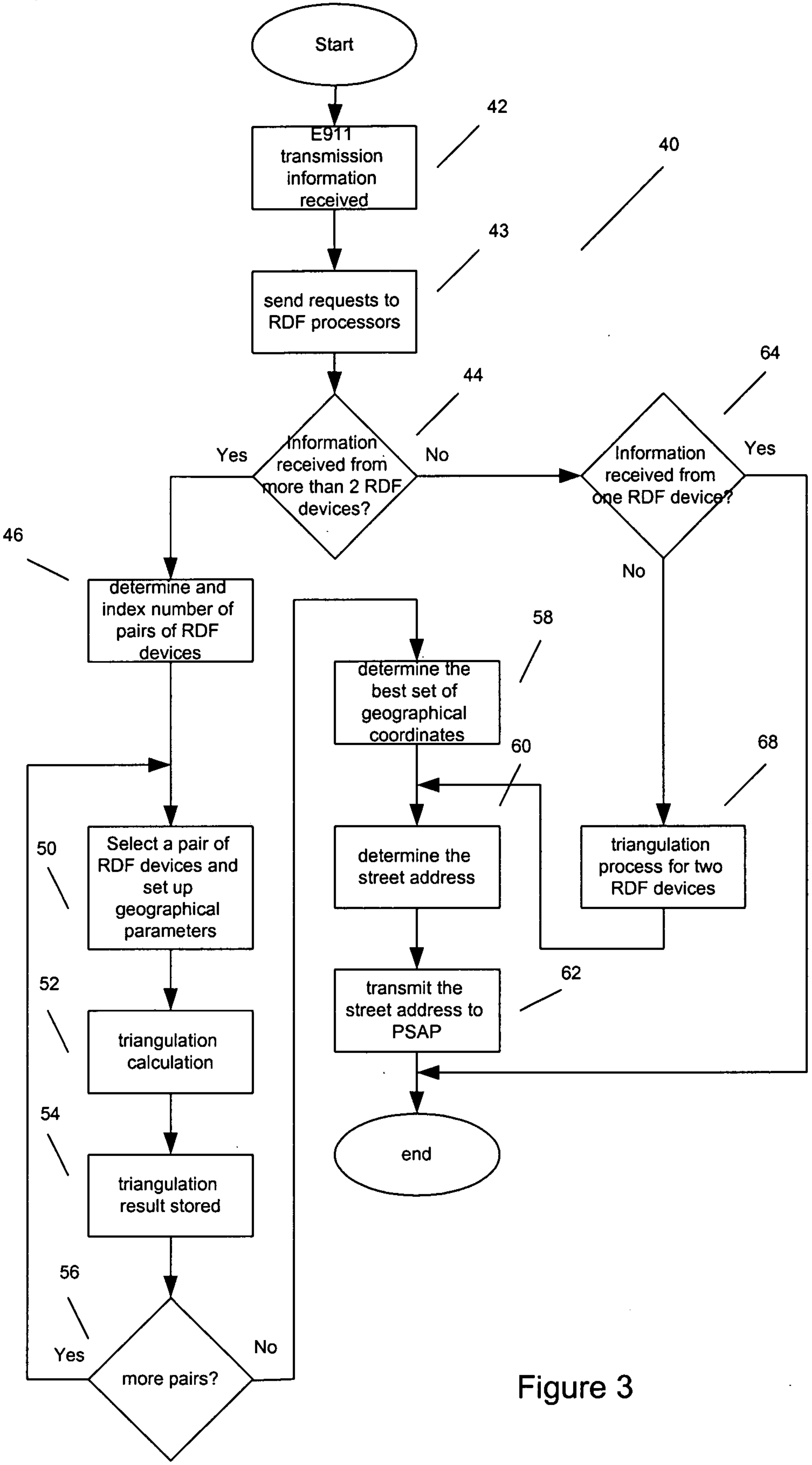

Start
42
E911 transmission information received
40
43
send requests to RDF processors
44
64
Yes
Information received from more than 2 RDF devices?
No
Information received from one RDF device?
Yes
46
No
determine and index number of pairs of RDF devices
58
determine the best set of geographical coordinates
60
68
Select a pair of RDF devices and set up geographical parameters
50
determine the street address
triangulation process for two RDF devices
52
triangulation calculation
transmit the street address to PSAP
62
54
triangulation result stored
end
56
Yes
No
more pairs?

Figure 3

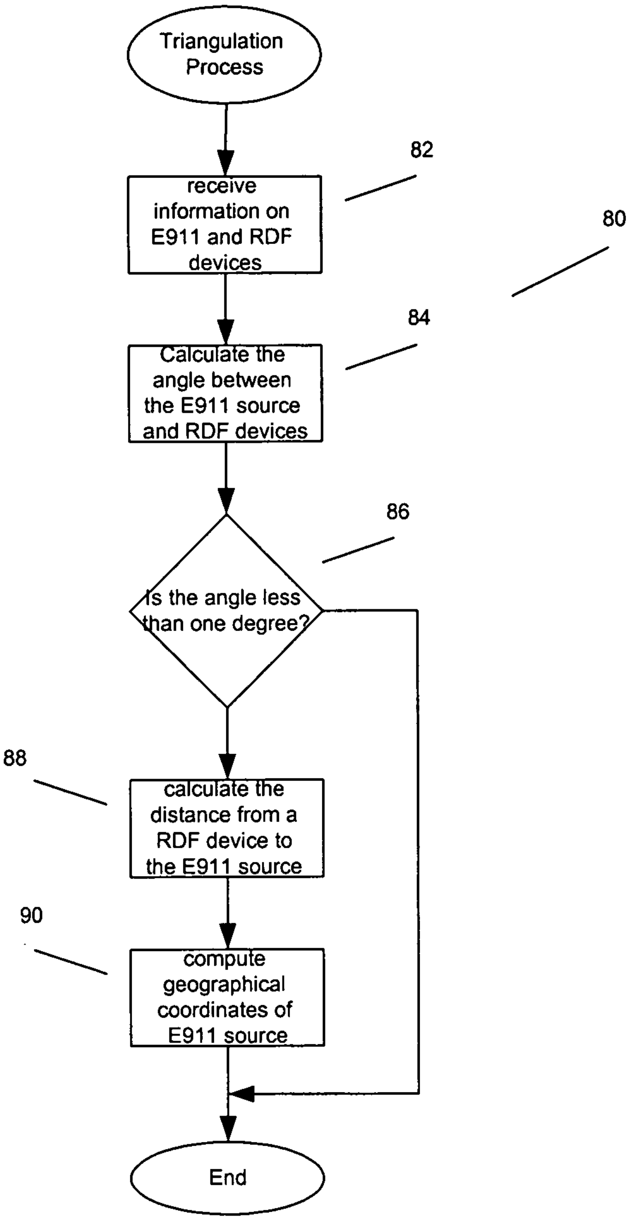
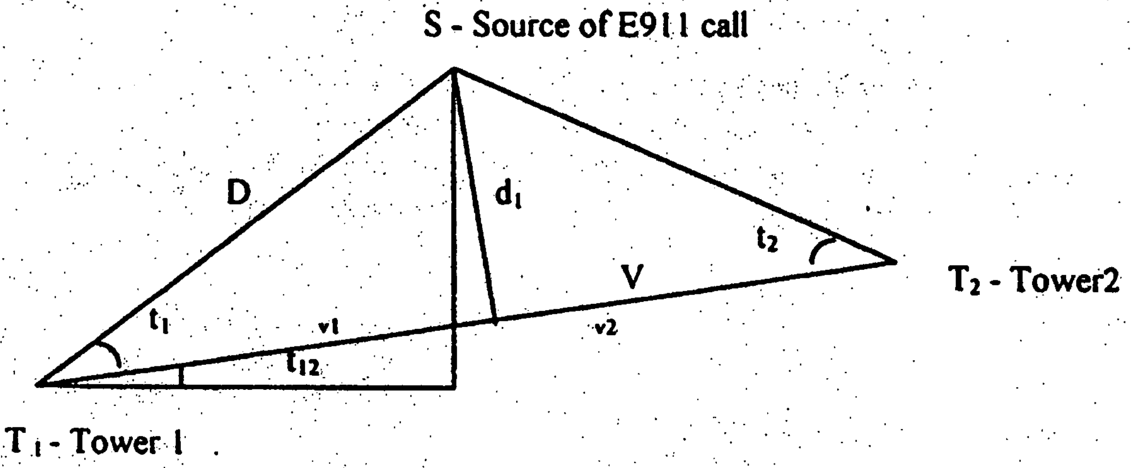


Figure 4

09927962 .081001



DEFINITIONS

d_1 is the perpendicular distance from Source, S, to the vector, V, connecting T_1 and T_2
D is the derived distance from S to T_1
V is the length of the vector from T_1 to T_2
v_1 is the distance from T_1 to d_1
t_1 is the angle from S to T_2
t_{12} is the angle at T_1 from the vector, V, to a line representing the Latitude of T_1
t_2 is the angle from S to T_1
V is the sum of v_1 and v_2

v_1 = V (tangent t_2) / [(tangent t_1) + (tangent t_2)] ------ Equation 1

D = v_1 / cos t_1 ---------------- Equation 2

Source Latitude = T_1 Latitude + D sin (t_1 + t_{12}) ------- Equation 3

Source Longitude = T_1 Longitude + D cos (t_1 + t_{12}) ---- Equation 4

FG 5.